Casing for a blister package

The present invention relates to a casing for a blister package according to the preamble of claim 1.

Pills, tablets of drugs, chewing gum and the like are frequently provided in so-called blister packages. Blister packages usually comprise formed cavities holding the product, in particular they can be made of a clear plastic material. Usually the cavities are arranged in a plurality of rows. Between the outer cavities and each longitudinal end of the blister package there is an end region, which is frequently used to display information, e.g. the product name, the brand label, the expiry date or the batch number etc.. Since the information is typically displayed only on one end region, the end regions at both ends of the blister packages are often of varying width thus resulting in an asymmetric shape of the blister package.

The cavities are of a shape, e.g. cylindrical, cubic or ball-shaped, which is optimized to hold one piece of the product. On one side - the bottom side - the cavities of the plastic material layer are open. This bottom side is usually covered by a foil (e.g. aluminum foil). In order to remove a piece of the product from its cavity the user pushes on the cavity of said piece to cause the piece to perforate the foil and to get removed.

To protect the blister packages from being damaged (e.g. by inadvertently opening a cavity) while being carried around in a pocket, and to make removal of the product more

convenient (e.g. by preventing removal of several pieces of the product with one push), various casings have been suggested.

A typical embodiment of such a casing is described in DE 198 13 350 A1. The casing described there comprises a bottom having essentially the same shape as an appropriate blister package. The bottom has openings formed and arranged like the cavities of the blister package, such that if the blister package is properly arranged on the bottom each cavity is arranged centered with an opening. At both lateral ends of the bottom the casing comprises guiding means while at one longitudinal end it comprises an abutment bar.

To arrange the blister package properly in the casing, the blister package is inserted into the casing at the open longitudinal end (opposite to the abutment bar) and pushed towards the abutment bar while being guided by the guiding means, until the front end of the blister package contacts the abutment bar. In this state each cavity of the blister package lies centered with an opening of the bottom, and the blister package is held down on the bottom by the guiding means.

If the blister package to be arranged in the casing is of asymmetric shape, as described above, it has to be inserted into the casing in exactly one proper orientation. Otherwise, the cavities of the improperly arranged blister package are not arranged centered with the openings of the bottom and the product can not be removed by the user. Rather, he has to remove the blister package, turn it and insert it again with its other end first. To avoid this

inconvenience the user always has to pay attention which end of the blister package to insert first into the casing.

An object of the invention is to provide a casing for a blister package, which overcomes the disadvantages of the above-described casings.

This object is achieved by a casing for a blister package according to the invention as it is defined by the features of the independent claim. Preferred embodiments can be gathered from the dependent claims.

In particular, the casing according to the invention comprises a bottom part having a bottom with openings therein and comprising positioning means. The positioning means are shaped and arranged to act on at least one cavity of the blister package in order to position each cavity of the blister package centered with an opening. Because the positioning means act directly on a cavity, the blister package can be arranged in a proper position irrespective of the shape of the end region of the blister package, such that the cavities are arranged centered with the openings in the bottom. This allows a user to insert a blister package of asymmetric shape, as described above, in both possible ways into the casing.

In a preferred embodiment of the invention, the positioning means are arranged at a longitudinal end of the bottom part, comprise at least one abutment extending up to the opening nearest to the abutment in order to abut against a cavity of the blister package, and further comprise a recess formed to accommodate an end region of the blister

package extending between the first cavity and the end of the blister package. This embodiment of the positioning means can be manufactured with comparatively low expense. Additionally, the shape of the recess (e.g. it may be bevelled) may allow a user-friendly easy insertion of the blister package.

The bottom part may comprise retaining and guiding means for holding the blister package down on the bottom and for properly arranging the blister package on the bottom with regard to its lateral position. They prevent the blister package arranged in proper position from leaving that position. Furthermore, they may simplify the introduction of the blister package into the casing.

In a preferred embodiment the casing further comprises a cover for closing the bottom part, such that a blister package properly arranged on the bottom part cannot be removed or get lost from the casing in the closed state. Also the cover serves as an additional protection against damage.

The cover can be pivotally attached to the bottom part such, that the cover can be pivoted in a plane parallel to the bottom part. This embodiment allows the casing to be opened without completely removing the cover from the bottom part. Therefore, the risk of loosing the cover is significantly reduced.

Further, the casing can comprise an axle for pivotal attachment of the cover to the bottom part. Such an axle allows an easy construction of a pivotally attached cover.

In a preferred embodiment the bottom part has stepped

engaging means for supporting the blister package after being properly arranged on the bottom part. The stepped engaging means are arranged at that end of the bottom part opposite the positioning means. They allow the blister package to be engaged after being properly positioned on the bottom part thus additionally retaining the blister package. To allow a blister package of asymmetric shape to be engaged on both ends regardless of which end of the blister package has been inserted first the engaging means are stepped.

The casing for a blister package according to the invention is described in more detail hereinbelow by way of exemplary embodiments and with reference to the attached drawings, in which:

Fig. 1 - shows a top view of a typical embodiment of a blister package of asymmetric shape;

Fig. 2 - shows a top view of the blister package of Fig. 1 together with schematic positioning means of a casing according to the invention;

Fig. 3 - shows a perspective view of a bottom part of an embodiment of a casing according to the invention;

Fig. 4 - shows a perspective view of a casing comprising the bottom part of Fig. 3 and a cover;

Fig. 5 - shows a top view of the casing of Fig. 4 in open state; and

Fig. 6 - shows an enlarged view of the rear portion of the bottom part of Fig. 3.

Fig. 1 shows a blister package 1 of asymmetric shape. The blister package 1 comprises an upper side 13 with round cavities 12 formed to provide a product, e.g. pills, tablets of drugs, chewing gum or the like. The upper side 13 can be made of a plastic material (at least in the region of the cavities), in particular a clear plastic material, such that the product is visible. On the underside of the blister package 1 (not visible in Fig. 1) a foil is attached to the plastic material covering and closing the cavities 12.

Between the longitudinal ends 15 and the outer rows 14 of cavities 12 the blister package 1 comprises two end regions of different width, a wide end region 10 and a narrow end region 11. The wide end region 10 typically is provided with information, e.g. the product name or the brand label (not shown in Fig. 1).

The following applies to the rest of this description. If, in order to clarify the drawings, a figure contains reference signs not explained in the directly associated part of the description, then it is referred to previous description parts.

In Fig. 2 there is shown schematic positioning means 21A acting on the cavities 12 of one of the outer rows 14 of the blister package 1 of Fig. 1. The cavities 12 of the blister package 1 are in a well-defined position while the positioning means 21A abut the blister package 1. It doesn't matter if the cavities 12 of the outer row 14 near the narrow end region 11 or the cavities 12 of the outer row 14 near the wide end region 10 (indicated by the dashed line in Fig. 2) are abutting against the positioning means 21A. The position of the cavities 12 is the same in both arrangements of the

blister package 1.

Fig. 3 shows a bottom part 2 of an embodiment of a casing 4 (see Fig. 4 and 5) according to the invention. Bottom part 2 comprises a bottom 25 with ten openings 26. At the lateral ends of bottom 25 retaining and guiding means 22 are arranged comprising a guide bar 220 and two projections 221. Spaced to the two openings 26 forming one outer row of openings 26, a transverse bar 27 is arranged in transverse direction. Between transverse bar 27 and each of the said two openings 26 bottom part 2 comprises positioning means 21 extending in longitudinal direction. Each of them has a recess 211 and a abutment 210 heading towards openings 26. On the other side of transverse bar 27 a cylindrical axle 23 is arranged right-angled to bottom 25.

In Fig. 4 the whole casing 4 is shown including a cover 3 in a closed state. In this state the interior of casing 4 is not accessible and a blister package 1 arranged in casing 4 is protected of damage and loss.

Fig. 5 shows casing 4 with cover 3 in an open state. Cover 3 is mounted on axle 23 (see Fig. 3) of bottom part 2, such that casing 4 can be opened by pivoting cover 3 around axle 23.

For inserting a blister package 1 into casing 4 a user pushes the blister package 1 between the guiding bars 220 and beneath projections 221 towards positioning means 21. Arriving at the positioning means 21 the front end region of blister package 1 is accommodated by the recesses 211, whatever end region is the front end region (the wide end

region 10 or the narrow end region 11). The user pushes blister package 1 further until cavities 12 of the first row 14 hit the front of the abutments 210. In this position each cavity 12 is arranged centered with a respective opening 26 and the blister package 1 as a whole is hold down on the bottom 25 by the projections 221.

Fig. 5 further shows that the bottom part 2 comprises two ribs 24 (which are shown in more detail in Fig. 6) as engaging means at the end opposite to the positioning means 21. Each of them has two steps 240, such that the blister package 1 arranged on the bottom part 2 as described above can engage one of the steps 240. If the blister package 1 is inserted with its wide end region 10 as the front end region in the bottom part 2, the end following the narrow end region 11 engages the according outer steps 240 of the ribs 24 and vice versa.